

IN THE CLAIMS:

1. (previously presented) A hybrid navigation system comprising:
 - a GPS signal processor for receiving GPS signals from satellites to determine positions of the mobile terminal;
 - a TDOA signal processor for receiving localization signals from stations of the mobile communication system to determine positions of the mobile terminal;
 - and
 - a neural network for learning and predicting the positions of the mobile terminal based on a selective use of signals received from the GPS signal processor when a predetermined number of satellites are in view and the TDOA signal processor.
2. (previously presented) The hybrid navigation system of claim 1, wherein the neural network uses the input from the GPS processor to determine position of the mobile terminal when four or more GPS satellites are in view.
3. (original) The hybrid navigation system of claim 1, wherein the neural network corrects weights to learn position information, receiving position values determined with the GPS signal processor, position values determined with the TDOA signal processor and clock bias of a GPS receiver, and the position values determined with the GPS signal processor as a target value.

4. (original) The hybrid navigation system of claim 3, wherein the neural network back propagates position values inputted by the GPS signal processor.

5. (original) The hybrid navigation system of claim 3, wherein the neural network learns the position values inputted by the GPS signal processor in real time.

6. (original) The hybrid navigation system of claim 3, wherein the target value of the neural network is a position value estimated with a Kalman filter of the GPS signal processor.

7. (original) The hybrid navigation system of claim 1, wherein the TDOA signal processor predicts positions of the mobile terminal in case that the number of visible satellites is less than four.

8. (original) The hybrid navigation system of claim 1, wherein the neural network receives the position values determined with the TDOA signal processor to predict positions of the mobile terminal by the learning process.

9. (original) A method of determining positions of a mobile terminal, comprising:

receiving position values determined with the GPS and the TDOA system;

learning the determined position information by a neural network in case that the number of the GPS signal is four or more;

estimating a present position of the mobile terminal with the GPS; and

estimating positions of the mobile terminal with the TDOA system including the learned neural network in case that the number of the received GPS signals is less than four and the total number of the received GPS and TDOA signals is three or more; and

initializing the GPS and the TDOA system in case that the total number of the received GPS and TDOA signals is less than three.

10. (original) The method of claim 9, wherein the case that the number of the TDOA signals is three or more takes priority in the step of estimating the position of the mobile terminal with the TDOA system.

11. (original) The method of claim 9, wherein the neural network learns by back-propagation.

12. (original) The method of claim 9, wherein the position with the GPS becomes the target value during the learning of the neural network.

13. (currently amended) A hybrid navigation system comprising:

a GPS signal processor for receiving GPS signals from GPS satellites to determine positions of the mobile terminal;

a TDOA signal processor for receiving localization signals from stations of the mobile communication system to determine positions of the mobile terminal;

and

a neural network for learning and predicting the positions of the mobile terminal based on signals received from the TDOA signal processor when GPS signals for positioning the mobile terminal are available from less than four GPS satellites, wherein the weights are assigned to each layer of the neural network.

14. (previously presented) The hybrid navigation system of claim 13, wherein the neural network uses the input from the GPS processor to determine position of the mobile terminal when four or more GPS satellites are in view.

15. (currently amended) The hybrid navigation system of claim 14, wherein the neural network corrects the weights to learn position information, receiving position values determined with the GPS signal processor, position values determined with the TDOA signal processor and clock bias of a GPS receiver, and the position values determined with the GPS signal processor as a target value.

16. (previously presented) The hybrid navigation system of claim 15, wherein the neural network back propagates position values inputted by the GPS signal processor.

17. (previously presented) The hybrid navigation system of claim 15, wherein the neural network learns the position values inputted by the GPS signal processor in real time.

18. (previously presented) The hybrid navigation system of claim 15, wherein the target value of the neural network is a position value estimated with a Kalman filter of the GPS signal processor.

19. (previously presented) The hybrid navigation system of claim 13, wherein the TDOA signal processor predicts positions of the mobile terminal in case that the number of visible satellites is less than four.

20. (previously presented) The hybrid navigation system of claim 13, wherein the neural network receives the position values determined with the TDOA signal processor to predict positions of the mobile terminal by the learning process.